

REMARKS

Status of the Claims

Claims 2, 4 – 6, 10 – 12, 16 – 17, and 21- 23 are currently pending. Claims 3, 7 – 9, 13 – 15, and 18 – 20 have been withdrawn. Claim 2 has been amended to correct a typographical error in the preceding amended claim set. The amendment is supported by original claim 2.

Rejection of Claims under 35 U.S.C. § 103

Claims 2, 4 – 6, 10 – 12, 16 – 17, and 21- 23 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over the disclosure of Rock (US 6,022,529) in view of Anderson (US Pat. No. 6,437,150).

Applicants note that the Office had previously rejected the same claims as being obvious over the disclosure of Anderson in view of Rock. Although the instant Action asserts Applicant's preceding amendments and arguments overcame the rejection over Anderson in view of Rock, the same claims are now allegedly obvious over the disclosure of Rock in view of Anderson. Applicant sincerely requests that the Office provide a more thorough explanation of why the claims were not assessed for obviousness over the combination of Rock in view of Anderson when the Office asserted the previous rejection of the claims over the combination of Anderson over Rock, to expedite prosecution of the pending claims.

Rock has been cited by the Office because it "discloses a chemical structure identical to the species being examined without the fragrance molecule as well as a carrier for topical administration." Action ¶ 6. Applicants note that the disclosure in Rock was directed to provide a sunscreen that would be activated upon absorption of ultraviolet light, a clearly different problem. Nor did Rock disclose any reason why the skilled worker would use such compounds for anything other than to provide a sunscreen that would increasingly absorb ultraviolet light.

The Anderson reference is cited to provide nothing more than general teachings regarding photoactivation as a way to release fragrances. For example, Anderson has been cited for the *general* idea that fragrances can be released from a composition via photoactivation (*see* Action ¶ 7). And, that such releasable fragrances can be "attached to a variety of ketones [and] esters." Action ¶ 7. The Office also observed that "[t]he R1 group of Rock can be an ester or a biomolecule." Action ¶ 7. The Office notes compound 4 in Anderson is a fragrance and a product of photoactivation. Action ¶ 7. Applicants note that the scheme in Columns 5 and 6 of

Anderson, which shows the generation of compound 4, illustrates a compound (1) whose decomposition is triggered by a hydrolysis, not a photoactivation. And, the Office notes that "Rock is to be used with fragrances." Action ¶ 8 (citing Rock at col. 5, ll. 50-58).

The Office concluded that "it would have been obvious ... to attach the fragrance molecule of Anderson to the precursor group of Rock to impart a fragrance onto the compound of Rock." Action ¶ 8. The Office reasoned that since Anderson shows that "the fragrance molecule [compound 4 in Anderson] is capable of being a product of photochemical rearrangement," and since "Rock is to be used with fragrances ... it would have been obvious to impart the same advantages taught by both Rock and Anderson – namely, to provide advantage from photochemical rearrangement – to combine the references."

Applicants respectfully traverse.

A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a); *see Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966). The ultimate determination of whether an invention is or is not obvious is based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of non-obviousness. *See Graham*, 383 U.S. at 17-18.

The Supreme Court has emphasized that the key of supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. *KSR Int'l Co. v. Teleflex Inc.*, 127 U.S. 1727, 1741 (2007). The Court, quoting *In re Kahn*, stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006).

In cases involving new chemical compounds, it is necessary to "identify some reason that would have led a chemist to modify a known compound in a particular manner to establish *prima facie* obviousness of a new claimed compound." *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.* 492 F.3d 1350, 1357 (Fed. Cir. 2007). *See also Procter & Gamble Co. v. Teva Pharma. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009). Inherent in modification of a known compound is a reasoned identification of the known compound. *Eisai Co. Ltd. v. Dr. Reddy's Labs., Ltd.*, 533

F.3d 1353, 1359 (Fed. Cir. 2008) ("...post-KSR, a *prima facie* case of obviousness for a chemical compound still, in general, begins with a reasoned identification of a lead compound.") Further, obviousness requires one of ordinary skill in the art to have a reasonable expectation of success in deriving the claimed invention in light of the teachings of the prior art. *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009).

In this case, the Office has failed to assert a *prima facie* case of obviousness against the pending claims. First, the Office has not provided *any* reason that would have led a chemist to select a compound from Rock for modification. While Rock teaches "structurally similar" compounds, they are disclosed for use in sunscreen compositions. The Office has not provided a reason why one skilled in the art would select compounds which are taught for sunscreen compositions to be modified to yield photofragmentable fragrance compositions. Further, Anderson does not provide any guidance toward Rock because it discusses compounds which are chemically distinguishable from the compounds disclosed in Rock.

Anderson only generically notes that the compounds of the formula [Y]-[Z] "can also be a photolabile ester." See Col. 7, ll. 1 – 7. Such generic teaching does not suggest any *particular* photolabile ester, and particularly does not suggest the benzoin compounds of Rock. Only Example 50 of Anderson provides a compound, (E)-3-(2-hydroxyphenyl)acrylic acid 1-(2-hex-3Z-enyloxy carbonyl ethyl)hexyl ether, which contains a photolabile ester.

The *o*-hydroxy-(E)-cinnamate group in the compound of Example 50, upon exposure to light, isomerizes to the (Z) form. This isomerization is a photoactivation, not a photofragmentation as described in Rock. The isomerization enables a hydroxy group to be in position to release an organoleptic via a lactonization, generating a coumarin. Then, an intramolecular trans-esterification within the released alcohol can yield an alkyl lactone and an unsaturated alcohol. In each instance where a molecule is released during the decomposition of a [Y]-[Z] compound in Anderson, the reaction is essentially a hydrolysis or trans-esterification.

In contrast, the benzoin compounds of Rock decompose as the result of a homolytic cleavage of a bond alpha to the carbonyl as a direct result of exposure of light. The remaining radical can then rearrange to yield a 2-phenylbenzofuran.

Thus, the Action does not provide any reasoned basis for asserting that the skilled worker would select photofragmentable benzoinos of Rock for use with the photoactivated fragrance compositions of Anderson, in view of the distinctly different decomposition

mechanism disclosed in Anderson.

Second, while Rock teaches the use of sunscreen agents with a fragrance, at column 4, lines 50 -58, such are merely taught as a *separate* component within the carrier formulation, not as chemically bonded to the Rock compounds, nor would such a disclosure provide a reason for one skilled in the art to chemically bond a fragrance molecule to the sunscreen agent.

Third, the generic teachings of the Anderson reference fall squarely within the exceptions set forth in *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988), describing when something that *may* be obvious to try is *not* obvious. Specifically, the court stated the law as follows:

The admonition that "obvious to try" is not the standard under § 103 has been directed mainly at two kinds of error. In some cases, what would have been "obvious to try" would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful. E.g., *In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987); *Novo Industri A/S v. Travenol Laboratories, Inc.*, 677 F.2d 1202, 1208 (7th Cir. 1982); *In re Yates*, 663 F.2d 1054, 1057 (CCPA 1981); *In re Antonie*, 559 F.2d 618, 621 (C.C.P.A. 1977). In others, what was "obvious to try" was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only guidance as to the particular form of the claimed invention or how to achieve it. *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1380 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987); *In re Tomlinson*, 363 F.2d 928, 931 (CCPA 1966).

This reasoning has been expressly adopted by the Federal circuit post-KSR. *In re Kubin*, 561 F.3d at 1359.

In light of the preceding deficiencies, the Office has not provided a proper *prima facie* case of obviousness of the present claims over Rock in view of Anderson. Applicants respectfully request reconsideration and withdrawal of the rejection.

Conclusion

Applicants respectfully submit that all requirements of patentability have been met. Allowance of the claims and passage of the case to issue are therefore respectfully solicited. If the Examiner has any questions or comments regarding this Amendment, they are encouraged to contact the undersigned as indicated below.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

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By: /Timothy M. Long/
Timothy M. Long, Ph.D.
Reg. No. 59,652